

REMARKS

Claim 1-84 are pending in this application. Reconsideration and reexamination of the application is respectfully requested in view of the following remarks.

The Examiner, in the first item of the Office Action, indicates that claims 1 to 82 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The Examiner's indication is as follows.

The specification never describes how to make and/or use the image-synthesizing unit. The only phrase ever used to described it is functional and usage.

The Examiner's indication is respectfully traversed for the following reasons.

The image synthesizing unit is adapted to pass through the moving image signal when one moving image signal is converted by the image inputting unit. The image synthesizing unit is, on the other hand, adapted to synthesize more than one moving image signal to generate a synthesized moving image signal when more than one moving image signal is converted by the image inputting unit as described in the specification at page 9, lines 30 to 35, page 11, lines 11 to 16, page 13, lines 19 to 26, page 14, line 14 to page 15, line 2. The transmission control unit 24 is adapted to control the image inputting unit 21 in accordance with the line connection state information so as to input one moving picture taken by one camera unit 10i to be converted to one moving image signal or more than one moving picture taken by more than one camera unit to be converted to more than one moving image signal as described in the specification at page 26, lines 25 to 59. The transmission control unit 24 is further operated to control the image synthesizing unit 22 in accordance with the line connection state information so that the image synthesizing unit 22 passes through the moving image signal when one moving image signal is converted by the image inputting unit 21 and synthesizes more than one moving image signal to generate a synthesized moving image signal when more than one moving image signal is converted by the image inputting unit 21 as described at page 28, lines 9 to 15. Furthermore, the image synthesizing unit 56 is operative to select specified moving image signals or synthesized moving image signals from among the moving image signals or synthesized moving image signals reconstructed by the one or more decompressing and decoding units 55a to 55n in accordance with the synthesizing operation request generated by the receiving control unit 59 and synthesize the specified moving image signals or synthesized moving image signals to generate a synthesized moving image signal when the specified moving image signals or synthesized moving image signals are reconstructed by the one or more decompressing and decoding units 55a to 55n as described in the specification at page 18, lines 17 to 25.

As will be seen from the foregoing description, the image synthesizing unit 22

has a function of selectively assuming two operation modes including a passing (non-synthesizing) operation mode in which the image synthesizing unit 25 is operative to pass through the moving image signal and a synthesizing operation mode in which the image synthesizing unit 22 is operative to synthesize more than one moving image signal under control of the transmission control unit 24. Likewise, the image synthesizing unit 56 has a function of selectively assuming two operation modes including a passing (non-synthesizing) operation mode in which the image synthesizing unit 56 is operative to pass through the moving image signal and a synthesizing operation mode in which the image synthesizing unit 56 is operative to synthesize more than one moving image signal under control of the receive control unit 52. The invention concerns the architectural relationship of the functional blocks. It is therefore submitted that the Examiner's indication is no longer applicable to the present application.

The Examiner, in the second item of the Office Action, indicates that claims 1 to 22, 34 to 63, and 75 to 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujiyama et al. in view of Seeley et al.

In response to the Examiner's indication, claim 1 has been amended as set forth above. Likewise, claims 2, 5 to 14, 17 to 20, 23 to 28, 30 to 38, 40, 42, 43, 46 to 62, 64 to 69, 71 to 79, and 81 have been amended. The amendments are supported by the specification at page 9, lines 9 to 13, page 10, lines 18 to 21, page 19, line 33 to page 20, line 4, and FIGS. 2 to 6, accordingly, are within the scope of the application as originally filled. In view of the amendments to claim 1, the Examiner's indication is no longer applicable to the present application for the reasons as described hereinlater.

The image transmitting and receiving system defined in the amended claim 1 comprising:

- (a) a plurality of data transmission apparatuses each for transmitting one or more transmission data portions each generated as a result of compressing and encoding one or more moving image signals taken by respective camera units; and
- (b) a plurality of data receiving apparatuses each for receiving the one or more transmission data portions transmitted by the data transmission apparatuses through a network.

Each of the data transmission apparatuses (20) includes:

- (a1) a plurality of camera units (10a to 10e) each for taking a moving picture of an object;
- (a2) an image inputting unit (21) operatively connected with the camera units (10a to 10e) for operating one or more the camera units (10a to 10e) to input one or more moving pictures taken by the one or more camera units (10a to 10e) to be converted to one or more moving image signals;

(a3) an image synthesizing unit (22) for selectively passing through the moving image signal and synthesizing more than one moving image signal to generate a synthesized moving image signal on the basis of the one or more moving image signals converted by the image inputting unit (21);

(a4) a compressing and encoding unit (26) for compressing and encoding the moving image signal passed through by the image synthesizing unit (22) when the image synthesizing unit (22) passes through one moving image signal and compressing and encoding the synthesized moving image signal generated by the image synthesizing unit (22) when the image synthesizing unit (22) synthesizes more than one moving image signal to generate coded moving image signal data;

(a5) a plurality of data transmitting units (27a to 27m) for inputting the coded moving image signal data generated by the compressing and encoding unit (26), generating address information about the data receiving apparatuses (50) to which the coded moving image signal data is directed, and attaching address information to the coded moving image signal data to generate one or more transmission data portions directed to the respective data receiving apparatuses (50), the number of said data transmitting units (27a to 27m) corresponding to the number of data receiving apparatuses to which said coded moving image signal data is directed;

(a6) a transmission line connection control unit (23) for inputting the one or more transmission data portions generated by the data transmitting units (27a to 27m), establishing and maintaining one or more line connections between the data transmitting units (27a to 27m) and respective data receiving apparatuses (50) in accordance with the address information attached in the one or more transmission data portions so as to transmit the one or more transmission data portions through the network (30) to the respective data receiving apparatuses (50), and generating line connection state information; and

(a7) a transmission control unit (24) for controlling the image inputting unit (21), the image synthesizing unit (22), and the transmission line connection control unit (23) in accordance with the line connection state information generated by the transmission line connection control unit (23).

Each of the data receiving apparatuses (50) includes:

(b1) a receiving line connection control unit (53) for receiving the one or more transmission data portions transmitted by the respective one or more data transmission apparatuses (20);

(b2) a plurality of data receiving units (54a to 54n) for receiving the one or more transmission data portions to reconstruct coded moving image signal data, the receiving line connection control unit (53) operative to establish and maintain one or more line

connections between the data receiving units (54a to 54n) and the respective one or more data transmission apparatuses (20) in accordance with the address information attached in the one or more transmission data portions so as to receive the one or more transmission data portions through the network (30) from the respective one or more data transmission apparatuses (20);

(b3) a plurality of decompressing and decoding units (55a to 55n) electrically connected with the respective data receiving units (54a to 54n) in one-to-one relationship for decompressing and decoding the coded moving image signal data reconstructed by the respective data receiving units (54a to 54n) to reconstruct one or more moving image signals or synthesized moving image signals;

(b4) an image synthesizing unit (56) for selectively passing through the moving image signal or the synthesized moving image signal and synthesizing more than one moving image signal or synthesized moving image signal to generate a synthesized moving image signal on the basis of the one or more moving image signals or synthesized moving image signals reconstructed by the decompressing and decoding units (55a to 55n);

(b5) a data outputting unit (58) for outputting the moving image signal or the synthesized moving image signal passed through by the image synthesizing unit (56) when the image synthesizing unit (56) passes through the moving image signal or the synthesized moving image signal, and outputting the synthesized moving image signal synthesized by the image synthesizing unit (56) when the image synthesizing unit (56) generates the synthesized moving image signal;

(b6) a monitoring unit (51) having a screen for selectively displaying one moving picture on the screen on the basis of the moving image signal outputted by the data outputting unit (58), and displaying a plurality of moving pictures on the screen on the basis of the synthesized moving image signal outputted by the data outputting unit (58);

(b7) an operation unit (52) for inputting an operation instruction therethrough; and

(b8) a receiving control unit (59) for generating an operation request in accordance with the operation instruction inputted by the operation unit (52), controlling the receiving line connection control unit (53) in accordance with the operation request and the one or more transmission data portions transmitted by the respective one or more data transmission apparatuses (20).

From the elements (a5) and (a6) forming part of the transmitting and receiving system defined in the amended claim 1, it will be understood that each of the data transmission apparatuses includes a plurality of data transmitting units, the number of data transmitting units corresponds to the number of data receiving apparatuses to which the coded moving image signal data is directed, and a transmission line connection

control unit for inputting the one or more transmission data portions generated by the data transmitting units, establishing and maintaining one or more line connections between the data transmitting units and respective data receiving apparatuses in accordance with the address information attached in the one or more transmission data portions so as to transmit the one or more transmission data portions through the network to the respective data receiving apparatuses, and generating line connection state information.

This leads to the fact that each of the data transmitting apparatuses can reliably transmit the coded moving image signal data to a plurality of data receiving apparatuses while minimizing the effect of the condition of the line connection with each of the data receiving apparatuses.

From the elements (b2), (b3), and (b8) forming part of the transmitting and receiving system defined in the amended claim 1, it will be understood that each of the data receiving apparatuses includes a plurality of data receiving units for receiving the one or more transmission data portions to reconstruct coded moving image signal data, the receiving line connection control unit operative to establish and maintain one or more line connections between the data receiving units and the respective one or more data transmission apparatuses in accordance with the address information attached in the one or more transmission data portions so as to receive the one or more transmission data portions through the network from the respective one or more data transmission apparatuses; a plurality of data receiving units in one-to-one relationship for decompressing and decoding the coded moving image signal data reconstructed by the respective data receiving units to reconstruct one or more moving image signals or synthesized moving image signals, and a receiving control unit for generating an operation request in accordance with the operation instruction inputted by the operation unit, controlling the receiving line connection control unit in accordance with the operation request and the one or more transmission data portions transmitted by the respective one or more data transmission apparatuses.

This leads to the fact that each of the data receiving apparatuses can reliably receive, decompress and decode the transmission data portions received from a plurality of data transmission apparatuses as well as permits an operator to operate the receiving line connection control unit to selectively receive the transmission data portions transmitted by a plurality of data transmission apparatuses while minimizing the effect of the condition of the line connection with each of the data transmission apparatuses.

Fujiyama, on the other hand, discloses a monitoring system having image transmitting apparatuses 1-1 to 1-n, image receiving apparatuses 2-1 to 2-m, a digital exchange 3, transfer devices 4-1 to 4-n between the image transmitting apparatuses 1-1

to 1-n and the image receiving apparatuses 2-1 to 2-m, digital transmission lines 5-1 to 5-n connecting each of the image transmitting apparatuses 1-1 to 1-n to the corresponding transfer devices 4-1 to 4-n. All of the image transmitting apparatuses 1-1 to 1-n are the same in construction, and each of the image transmitting apparatuses 1-1 to 1-n which is composed of a monitoring camera 1a, an image encoder 1b for encoding the image caught by the monitoring camera 1a and outputting the code, and a transmitter 1c for transmitting the coded image data to the digital exchange 3. All of the image receiving apparatuses 2-1 to 2-m are the same in construction and each of the image receiving apparatuses 2-1 to 2-m is composed of an image receiver 2a and a monitor 2b.

Fujiyama, however, fails to disclose the elements (a5) and (a6) forming part of the data transmission apparatus defined in the amended claim 1. Further, Fujiyama fails to disclose the essential constituent elements (b2), (b3), and (b8) forming part of the data receiving apparatus defined in the amended claim 1.

The image transmitting and receiving system defined in the amended claim 1 is entirely different in construction from the monitoring system disclosed in the cited reference to Fujiyama et al.

The transmitting and receiving system defined in the amended claim 1 can obtain the advantages that (1) each of the data transmitting apparatuses can reliably transmit the coded moving image signal data to a plurality of data receiving apparatuses while minimizing the effect of the condition of the line connection with each of the data receiving apparatuses resulting from the constituent elements (a5) and (a6), and (2) each of the data receiving apparatuses can reliably receive, decompress and decode the transmission data portions received from a plurality of data transmission apparatuses as well as permits an operator to operate the receiving line connection control unit to selectively receive the transmission data portions transmitted by a plurality of data transmission apparatuses while minimizing the effect of the condition of the line connection with each of the data transmission apparatuses resulting from the constituent elements (b2), (b3), and (b8).

On the other hand, in the monitoring system disclosed in the cited reference to Fujiyama, each of the image transmitting apparatuses 1-1 to 1-m comprises only one transmitter 1, and each of the image receiving apparatuses 2-1 to 2-m comprises only one image receiver 2a. This leads to the fact that when, for example, the transmitter 1 fails, the image transmitting apparatus 1-i cannot transmit any image data, and the image receiving apparatus 2-i cannot receive any data from the image transmitting apparatus 1-i. Likewise, for example, the image receiver 2a fails, the image receiving apparatus 2-i cannot receive any data from the image transmitting apparatus 1-i.

Thus, the monitoring system disclosed in the cited reference to Fujiyama cannot expect the advantages of the transmitting and receiving system defined in the amended claim 1, resulting from the fact that Fujiyama fails to disclose the elements (a5) and (a6) forming part of the image receiving apparatus and the elements (b2), (b3), and (b8) forming part of the data receiving apparatus defined in the amended claim 1.

The following argument will be then made about the transmitting and receiving system defined in the amended claim 1 on the basis of the comparison with the cited reference to Seeley et al.

Seeley discloses a workstation for video security system 106 includes a video display 602, keyboard 604, speaker 606, and microphone 608. The display 602 is divided into four quadrants labeled 602a-602d. In quadrant 602b, the operator has the ability to display up to sixteen thumbnails (i.e., the compressed frames of video shown in FIG. 4B).

Seeley, however, fails to disclose the elements (a5) and (a6) forming part of the image receiving apparatus and (b2), (b3), and (b8) forming part of the data receiving apparatus defined in the amended claim 1.

This leads to the fact that the image transmitting and receiving system defined in the amended claim 1 is entirely different in construction from the monitoring system disclosed in the cited reference to Seeley, et al.

Further, the workstation disclosed in the cited reference to Seeley, et al. cannot expect the advantages of the transmitting and receiving system defined in the amended claim 1, resulting from the fact that Seeley fails to disclose the elements (a5) and (a6) forming part of the image receiving apparatus and (b2), (b3), and (b8) forming part of the data receiving apparatus defined in the amended claim 1.

It will therefore be appreciated from the foregoing description that the transmitting and receiving system defined in the amended claim 1 is patentably distinguishable over the disclosure of the cited references to Fujiyama et al. and Seeley et al.

Claims 2 to 33 are dependent on the amended claim 1 which is believed to be patentably distinguishable over the disclosure of the cited references to Fujiyama et al. and Seeley et al. It is therefore believed that claims 2 to 33 are patentably distinguishable over the disclosure of the cited references to Fujiyama et al. and Seeley et al based on the same reason as described above.

Likewise, the image transmission apparatus defined in the amended claim 34 comprising:

- (a1) a plurality of camera units each for taking a moving picture of an object;
- (a2) an image inputting unit operatively connected with said camera units for

operating one or more said camera units to input one or more moving pictures taken by said one or more camera units to be converted to one or more moving image signals;

(a3) an image synthesizing unit for selectively passing through said moving image signal and synthesizing more than one moving image signal to generate a synthesized moving image signal on the basis of the one or more moving image signals converted by said image inputting unit;

(a4) a compressing and encoding unit for compressing and encoding said moving image signal passed through by said image synthesizing unit when said image synthesizing unit passes through one moving image signal and compressing and encoding said synthesized moving image signal generated by said image synthesizing unit when said image synthesizing unit synthesizes more than one moving image signal to generate coded moving image signal data;

(a5) a plurality of data transmitting units for inputting said coded moving image signal data generated by said compressing and encoding unit, generating address information about said data transmitting apparatus and one or more image receiving apparatus to which said coded moving image signal data is directed, and attaching address information to said coded moving image signal data to generate one or more transmission data portions directed to said respective one or more image receiving apparatus, the number of said data transmitting units corresponding to the number of data receiving apparatuses to which said coded moving image signal data is directed;

(a6) a transmission line connection control unit for inputting said one or more transmission data portions generated by said data transmitting units, establishing and maintaining one or more line connections between said data transmitting units and respective one or more image receiving apparatus in accordance with said address information attached in said one or more transmission data portions so as to transmit said one or more transmission data portions through a network to said respective one or more image receiving apparatus, and generating line connection state information; and

(a7) a transmission control unit for controlling said image inputting unit, said image synthesizing unit, and said transmission line connection control unit in accordance with said line connection state information generated by said transmission line connection control unit.

From the elements (a5) and (a6) forming part of the image transmission apparatus defined in the amended claim 34, it will be understood that the image transmission apparatus defined in the amended claim 34 can reliably transmit the coded moving image signal data to a plurality of data receiving apparatuses while minimizing the effect of the condition of the line connection with each of the data receiving apparatuses.

Fujiyama and Seeley, however, fail to disclose the elements (a5) and (a6) forming part of the image transmission apparatus defined in the amended claim 34.

This leads to the fact that the image transmission apparatus defined in the amended claim 34 is entirely different in construction from the monitoring system disclosed in the cited reference to Fujiyama et al and the workstation disclosed in the cited reference to Seeley et al. The fact that the construction of the image transmission apparatus defined in the amended claim 34 is entirely different from that of the monitoring system disclosed in the cited reference to Fujiyama et al and the workstation disclosed in the cited reference to Seeley et al. leads to the fact that that the above function and advantages attained by the image transmission apparatus defined in the amended claim 34 cannot be expected from the monitoring system disclosed in the cited reference to Fujiyama et al nor the workstation disclosed in the cited reference to Seeley et al.

It will therefore be appreciated from the foregoing description that the image transmission apparatus defined in the amended claim 34 is patentably distinguishable over the disclosure of the cited references to Fujiyama et al. and Seeley et al.

Claims 36, 38, and 39 are dependent on the amended claim 34 which is believed to be patentably distinguishable over the disclosure of the cited references to Fujiyama et al. and Seeley et al. It is therefore believed that claims 36, 38, and 39 are patentably distinguishable over the disclosure of the cited references to Fujiyama et al. and Seeley et al.

Likewise, the image receiving apparatus defined in the amended claim 35 comprises:

(b1) a receiving line connection control unit for receiving said one or more transmission data portions transmitted by said respective one or more image transmission apparatuses (20);

(b2) a plurality of data receiving units for receiving said one or more transmission data portions to reconstruct coded moving image signal data, said receiving line connection control unit operative to establish and maintain one or more line connections between said data receiving units and said respective one or more image transmission apparatuses in accordance with said address information attached in said one or more transmission data portions so as to receive said one or more transmission data portions through said network from said respective one or more image transmission apparatuses;

(b3) a plurality of decompressing and decoding units electrically connected with said respective data receiving units in one-to-one relationship for decompressing and decoding said coded moving image signal data reconstructed by said respective data receiving units to reconstruct one or more moving image signals or synthesized moving

image signals.

(b4) an image synthesizing unit for selectively passing through said moving image signal or said synthesized moving image signal and synthesizing more than one moving image signal or synthesized moving image signal to generate a synthesized moving image signal on the basis of the one or more moving image signals or synthesized moving image signals reconstructed by said decompressing and decoding units;

(b5) a data outputting unit for outputting said moving image signal or said synthesized moving image signal passed through by said image synthesizing unit when said image synthesizing unit passes through said moving image signal or said synthesized moving image signal, and outputting said synthesized moving image signal synthesized by said image synthesizing unit when said image synthesizing unit generates said synthesized moving image signal;

(b6) a monitoring unit having a screen for selectively displaying one moving picture on said screen on the basis of said moving image signal outputted by said data outputting unit, and displaying a plurality of moving pictures on said screen on the basis of said synthesized moving image signal outputted by said data outputting unit;

(b7) an operation unit for inputting an operation instruction therethrough; and

(b8) a receiving control unit for generating an operation request in accordance with said operation instruction inputted by said operation unit, controlling said receiving line connection control unit in accordance with said operation request and said one or more transmission data portions transmitted by said respective one or more image transmission apparatuses.

From the elements (b2), (b3), and (b8) forming part of the image receiving apparatus defined in the amended claim 35, it will be understood that the image receiving apparatus defined in the amended claim 35 can reliably receive, decompress and decode the transmission data portions received from a plurality of data transmission apparatuses as well as permits an operator to operate the receiving line connection control unit to selectively receive the transmission data portions transmitted by a plurality of data transmission apparatuses while minimizing the effect of the condition of the line connection with each of the data transmission apparatuses.

Fujiyama and Seeley, however, fail to disclose the elements essential constituent elements (b2), (b3), and (b8) forming part of the image receiving apparatus defined in the amended claim 35.

This leads to the fact that the image receiving apparatus defined in the amended claim 35 is entirely different in construction from the monitoring system disclosed in the cited reference to Fujiyama et al. and the workstation disclosed in the cited reference to Seeley et al. The fact that the construction of the image receiving apparatus defined in

the amended claim 35 is entirely different from that of the monitoring system disclosed in the cited reference to Fujiyama et al and the workstation disclosed in the cited reference to Seeley et al. leads to the fact that that the above function and advantages attained by the image receiving apparatus defined in the amended claim 35 cannot be expected from the monitoring system disclosed in the cited reference to Fujiyama et al nor the workstation disclosed in the cited reference to Seeley et al.

It will therefore be appreciated from the foregoing description that the image receiving apparatus defined in the amended claim 35 is patentably distinguishable over the disclosure of the cited references to Fujiyama et al. and Seeley et al.

Claims 37, 40, and 41 are dependent on the amended claim 35 which is believed to be patentably distinguishable over the disclosure of the cited references to Fujiyama et al. and Seeley et al. It is therefore believed that claims 37, 40, and 41 are patentably distinguishable over the disclosure of the cited references to Fujiyama et al. and Seeley et al.

Claims 42 to 74 are defined as method claims respectively corresponding to claims 1 to 33. Claims 42 to 74 are patentably distinguishable over the cited references to Fujiyama et al. and Seeley et al. for the reasons that the amended claim 1 is patentably distinguishable over the cited references to Fujiyama et al. and Seeley et al. Claims 75, 77, 79, and 80 are defined as method claims respectively corresponding to claims 34, 36, 38, and 39. Likewise, claims 75, 77, 79, and 80 are patentably distinguishable over the cited references to Fujiyama et al. and Seeley et al. for the reasons that the amended claim 34 is patentably distinguishable over the cited references to Fujiyama et al. and Seeley et al. Likewise, claims 76, 78, 81, and 82 are defined as method claims respectively corresponding to claims 35, 37, 40, and 41. Claims 76, 78, 81, and 82 are patentably distinguishable over the cited references to Fujiyama et al. and Seeley et al. for the reasons that the amended claim 35 is patentably distinguishable over the cited references to Fujiyama et al. and Seeley et al.

New claim 83 is created to include the limitation supported by the specification from page 21, lines 13 to 27 without adding any new matter so that the new claim 83 is dependent upon the amended claim 1. It is submitted that the new claim 83 dependent upon the amended claim 1 should be found allowable for the same reasons that its base claim has been found to be allowable.

In addition, the image transmitting and receiving system defined in claim 83 can obtain the further advantage that each of the data receiving apparatus can selectively receive respective data transmitting apparatus based on the address information of the transmitting apparatus attached in the transmission data portions. Neither the cited reference to Fujiyama nor the cited reference to Seeley discloses that the address

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information includes that of the transmitter. The fact that, for example, Fujiyama fails to disclose that each of the image transmitting apparatus 1-i transmit the image data with the address information of the transmitting apparatus 1-i leads to the fact that each of the image receiving apparatus 2-i cannot selectively receive the image data from each of the image transmitting apparatus 1-i.

New claim 84 is created without adding any new matter to include the limitation defined in the amended claim 1 except for the fact that the synthesizing unit 22 and the synthesizing unit 56 are excluded.

For the above reasons it is believed that the application and claims as amended is now in proper condition for allowance, and reconsideration and early allowance of the amended application is respectfully solicited.

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